

NEW LOCALITIES AND BIOLOGICAL NOTES FOR THE GENUS *ONTHOPHAGUS* LATREILLE (COLEOPTERA: SCARABAEIDAE) IN AUSTRALIA

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Abstract

New distribution records are given for 25 species of Australian *Onthophagus* Latreille, as well as biological and descriptive notes for some species.

Introduction

The scarabaeine genus *Onthophagus* Latreille is the largest genus of dung beetles in the world and also in Australia, which has 173 described and at least 30 undescribed species. Matthews (1972) revised the Australian species which has stimulated interest in the group.

Storey (1977) described six new species and work by the present authors on the description of other new species is continuing. Allsopp (1975, 1977, 1978), Williams (1979) and Williams and Williams (1982, 1983a, 1983b, 1983c, 1984) have published various papers on regional scarabaeid faunas including *Onthophagus*, covering parts of coastal New South Wales and southeastern Queensland, with notes on seasonal activity and food preferences.

This paper lists many new localities for 25 species of *Onthophagus* with notes on the biology and morphology of some. Most of the new records are from northern Queensland, especially the Atherton Tableland and Cape York Peninsula. Pitfall traps baited with human faeces were one of the most effective means of collecting this genus (Matthews 1972) but light traps, and more recently flight intercept traps, have been very effective in obtaining rare species.

For convenience, the species are placed in the order used by Matthews (1972). The majority of specimens on which the records are based are housed in either the Australian National Insect Collection, Canberra, A.C.T. or the Queensland Department of Primary Industries, Mareeba, Qld.

New Records and Biological Notes

O. carmodensis Blackburn

WESTERN AUSTRALIA: 2-6km SE Broome, 14-18.xii.1975, R.I. Storey.

Matthews (1972) examined only the type and two old specimens of this species. New records came to human faeces.

O. prehensilis (Arrow)

QUEENSLAND: Iron Range, Cape York Peninsula, 3-10.iv.1975, M. Walford-Huggins; 15.04S, 145.07E, Mt Webb Nat. Pk, 27-30.iv.1981, J. Feehan; 15.03S, 145.09E, 3km NE of Mt Webb, 30.iv.-3.v.1981, J. Feehan; 15.24S, 145.03E, Hazelmere Station, 24km WNW of Cooktown, 8.v.1981, J. Feehan; Station Ck, 16km NW of Mt Molloy, 14-15.iv.1973, R.I. Storey; Davies Ck, via Mareeba, 10-11.iv.1973, R.I. Storey; Tolga, 15-20.iii.1985, 23-30.x.1985, 6-13.xi.1985, 20.i.1986, J.D. Brown; 12km W of Herberton, 11-15.ii.1979, R.I. Storey; Watsonville, 22-27.iii.1980, R.I. Storey; 3-14km along Mt Spec Rd, Paluma, 10-11.iv.1973., R.I. Storey.

This species was previously known only from the unique type, collected at Kuranda. Extensive trapping on the Atherton Tableland area has produced a good series of this species and some modifications to the description given by Matthews (1972) are warranted: total length 9.6 - 12.4 mm; in the male, the degree of the effacing of the frontal clypeal carina is variable from totally effaced to almost totally intact, and the elytra of some specimens are more nitid than others; the female is like the male except the frontal clypeal carina is stronger but still partially effaced in some, and the elytra are often more nitid with only a trace of a sericeous texture in some.

This species is very close to *O. glabratus* Hope but is easily separated from it and others in the *glabratus* group by the characters given in Matthews' (1972) key. *O. muticus* Macleay is commonly taken with *O. prehensilis* on the Atherton Tableland but can be separated by the more nitid pronotum and more prehensile tarsal claws.

Trapped with human faeces and taken at light traps, from Paluma north to Iron Range.

O. muticus Macleay

QUEENSLAND: Granite Gorge, Mareeba, 10.xi.1986, N. Bryde.

This is one of the few records of this commensal species taken on domestic animals. It is common in November attached to the hairs on the rumps of goats.

O. peramelinus (Lea)

QUEENSLAND: Watsonville, via Herberton, 22-27.iii.1980, R.I. Storey; 12km W of Herberton, 29-30.xii.1978, R.I. Storey; Tolga, 15-28.iii.1985, 23-30.x.1985, 13-20.xi.1985, 7.ii.1986, 3.iii.1986, J.D.Brown.

Matthews (1972) gave the distribution as northern New South Wales and southern Queensland. Specimens are recorded here from the Atherton Tableland in northern Queensland. These specimens are identical to southern specimens except the major males have the basal pronotal horn less developed, though still prominent, and some have a few setae on the lateral margins of the pygidium. The presence of a slight depression along the posterior margin of the pronotum helps to separate this from related species. Taken at human faeces and in light traps in open forest.

O. jalamari Matthews

NORTHERN TERRITORY: Mary R. Crossing, Arnhem Highway, 27-30.xi.1978, R.I. Storey.

QUEENSLAND: Laura, 30.xi.1974, A. and M. Walford-Huggins.

Matthews (1972) described this species from a series taken at Humpty Doo in the Northern Territory.

O. fissiceps Macleay

QUEENSLAND: Einasleigh R. Crossing, via Mt Surprise, 6-7.i.1980, R.I. Storey; Gilbert R. Crossing, 72 km E of Croydon, 11.i.1973, R.W.G. Jenkins.

Matthews (1972) gave the distribution of this species as the northern parts of the Northern Territory and Western Australia.

O. bicavicolis Lea

NORTHERN TERRITORY: 12.48S, 132.42E, Nourlangie Ck, 8km N of Mt Cahill, 21.v.1973, E. Matthews.

QUEENSLAND: 15.16S, 144.59E, 14km W by N of Hopevale Mission, 7-10.v.1981, J. Feehan; 15.24S, 145.03E, Hazelmere Station, 24km WNW of Cooktown, 8.v.1981, J. Feehan.

Matthews (1972) saw no recent specimens of this colourful species at the time of his revision. Since then several series have been taken from western Arnhemland and the Cooktown area, taken at cow dung in open pasture and at human faeces in closed forest.

O. macrocephalus Kirby

QUEENSLAND: 8km N of Landsborough, 24-25.xi.1973, R.I. Storey.

Known from Victoria and New South Wales, this is the first record of this species for Queensland, in traps baited with human faeces in wallum country.

O. capellinus Frey

QUEENSLAND: 27km E of Foysayth, 24.xii.1977, R.I. Storey; Watsonville, 7-15.ii.1976, R.I. Storey; 7km S of Herberton, 18.i.1979, R.I. Storey; Shanty Ck via Mareeba, 31.i.1978, I.C. Cunningham; Southedge via Mareeba, 3-8.ii.1976, 15.ii.1977, R.I. Storey; Mareeba, 18.ii.1977, K.H. Halfpapp; Mt Mulligan Plateau, 700 m, 15-19.iv.1985, K.H. Halfpapp; Walkamin, 23.i.1984, 8-15.iii.1985, J.D. Brown; Tolga, 8-15.iii.1985, 1.iv.1986, 15-28.ii.1985, 3.ii.1986, 10.ii.1986, 17.iii.1986, 20.i.1986, J.D. Brown.

Matthews (1972) examined six specimens from Silver Plains, Sellheim and Mt Molloy in northern Queensland. Numerous specimens from the Atherton Tableland and adjacent areas are now known. The series from Watsonville were taken in live mushrooms and in a pitfall trap baited with decaying fungi. These appear to be the only specimens for which any ecological data are available, most others being taken at light. It is possible that this and the related species *O. picipennis* Hope and *O. wigmungan*

Matthews are mycetophagous, which may account for their rarity in collections despite extensive trapping with excrement baits within their range.

O. rufosignatus Macleay

QUEENSLAND: 15.03S, 145.09E, 3km NE of Mt Webb, 30.iv.-3.v.1981, J. Feehan; 15.17S, 145.13E, 1km N of Rounded Hill, 5-7.v.1981, J. Feehan; Cape Flattery Rd, 28.x.1981, R.I. Storey; Petford, 27-29.i.1978, R.I. Storey; 16km W of Mt Garnet, 14-15.ii.1976, R.I. Storey; Einasleigh R. via Mt Surprise, 6-7.i.1980, R.I. Storey; Mt. Mulligan Plateau, 15-19.iv.1985, K.H. Halfpapp; 12.45S, 143.17E, 8km E of Mt Tozer, 8.vii.1986, T. Weir.

Matthews (1972) recorded this species from the coast of Queensland from near Brisbane to at least Mt Carbine, as well as the northern parts of the Northern Territory and Western Australia. Further collecting has shown it to occur as far north as the Iron Range area (Mt Tozer) in open forest, heath on sandy soil and pasture. Trapped with human faeces.

O. yir Yoront Matthews

QUEENSLAND: 6km SW of Kuranda, 10.xii.1984-15.i.1985, 15.i.-20.ii.1985, Storey and Halfpapp; 1.5km NW of Cape Tribulation (site 1), 23.ix.-7.x.1982, Monteith, Yeates and Thompson.

Recorded previously only from a few specimens from El Arish and Cairns, this species has since been taken several times in flight intercept traps, including the first non-coastal capture near Kuranda.

O. vilis Harold

NORTHERN TERRITORY: South Aligator R., Arnhem Hwy, 11.xii.1982, A. Walford-Huggins.

QUEENSLAND: Little Laura R., near Laura, 24.xii.1978, R.I. Storey; Lake Boronto (=Wincheura), Newcastle Bay, Cape York, 30.i.-4.ii.1975, G.B. Monteith.

Matthews (1972) stated that this rare species was known only from a few old specimens taken at the tip of Cape York Peninsula and one from Cairns. Nothing was known of its habitat or food preferences. In 1975 several specimens were taken burrowing in and under the fruits of *Syzygium rubrimolle* B. Hyland (Myrtaceae) in the Bamaga area by D.J. Rogers. Since then, it has been taken in *Syzygium suborbiculare* (Benth.) on northern Cape York Peninsula, and also in the fallen fruit of *Siphonodon pendulus* F.M. Bailey (Siphonodontaceae) near Laura. There now seems little doubt that fruit are its preferred food, making it the first carpophagous *Onthophagus* recorded in Australia. Although Williams and Williams (1983a, 1983b, 1983c) recorded *O. dunningi* Harold in a pitfall trap baited with rotting watermelon and several other scarabaeines responding to apple core baits, it seems doubtful that true carpophagy is involved with these species. This species is also recorded from the Northern Territory for the first time.

O. gangulu Matthews

QUEENSLAND: 40 Mile Scrub via Mt Garnet, 20-21.xi.1976, R.I. Storey.

Known previously from the Rockhampton area and Carnarvon Gorge (Matthews 1972).

O. yungaburra Matthews

QUEENSLAND: Wallaman Falls, 18-19.iv.1976, R.I. Storey; Kirrama Ra. via Kennedy, 17-18.iv.1976, R.I. Storey; Wongabel S.F. via Atherton, 10.xi.1983-9.1.1984, Storey and Brown; Tully Falls S.F., 20-21.iv.1973, R.I. Storey; Windsor Tableland, 9.ix.-4.xi.1976, R.I. Storey.

Previously known only from the type locality, Yungaburra.

O. rubescens Macleay

QUEENSLAND: Cooktown, 27.iv.1981, J. Feehan; 7km NW of Cooktown, 14-15.i.1978, R.I. Storey; Einasleigh R. via Mt Surprise, 6-7.i.1980, R.I. Storey; Davies Ck via Mareeba, 4-8.ii.1976, R.I. Storey; Southedge via Mareeba, xi.1976-iii.1977, R.I. Storey; 36km W of Georgetown, 31.iii.1976, R.I. Storey; 150km E of Hughenden, 26-30.iii.1976, R.I. Storey; 12.43S, 143.16E, 7km ENE of Mt Tozer, 6.vii.1986, T. Weir.

Matthews (1972) recorded this species from northern parts of Western Australia and the Northern Territory, and in Queensland as far north as Atherton. Subsequent collecting has extended its range to the Iron Range area (Mt Tozer).

O. waminda Matthews

QUEENSLAND: 15.47S, 145.17E, Moses Ck, 4km N by E of Mt Finnigan, 14-16.x.1980, T. Weir; Mt Lewis, 20km SW Mossman, 1000m, 10.vii.-1.viii.1982, S. & J. Peck; 13km up Mt Lewis Rd, 29.iv.-2.v.1976, R.I. Storey; 40km W of Ingham, near Wallaman Falls, 22.vi.-7.viii.1982, S. & J. Peck, 600m; Wallaman Falls, 18-19.iv.1976, R.I. Storey; Kirrama Ra. via Kennedy, 17-18.iv.1976, R.I. Storey; Windsor Tableland via Mt Carbine 26.xii.1983-24.i.1984, Storey and Halfpapp.

Matthews (1972) gave the distribution as the south eastern edge of the Atherton Tableland. Further collecting has extended this range north to near Cooktown and south to inland from Ingham. Specimens were taken at human faeces and flight intercept traps in closed forest up to 1000 metres.

O. parrumbal Matthews

QUEENSLAND: 7.5km NNW of Kuranda, 20.ii.-20.iii.1985, Storey and Halfpapp; 5km NNW of Kuranda, 20.ii.-20.iii.1985, Storey and Halfpapp; 4km NNW of Kuranda, 15.i.-20.ii.1985, Storey and Halfpapp; Tinaroo Ck Rd, 25km SE Mareeba, 11.iv.1976, R.I. Storey; Southedge Res. Station, via Mareeba, 5.ii.1976, R.I. Storey; Watsonville, 7-14.ii.1976, R.I. Storey; 43km W of Mt Garnet, 15.xi.1976, R.I. Storey; Mt Molloy, 18.iii.1980, I.C. Cunningham; Station Ck, 17km NW of Mt Molloy, 14.iv.1973, R.I. Storey; Saltbag Ck, 8km S of Mt Carbine, 14.iv.1973, R.I. Storey; Saddlebag Ck, 12 km W of Mt Molloy, 14.iv.1973, R.I. Storey; Cow Bay, north of Daintree R., 26.iii.-2.v.1983, Storey and Cunningham.

A mainly mycetophagous species recorded for the first time in the Atherton Tableland area, in closed and open forest situations. Taken in fresh mushrooms, traps baited with mushrooms and flight intercept traps.

O. kiambram Storey

QUEENSLAND: Binna Burra, Lamington Nat. Pk, 25.iii.-4.iv.1985, J. & N. Lawrence.

NEW SOUTH WALES: Gloucester R, Barrington Tops Nat. Pk, 12-14.xi.1981, T. Weir; Dorrigo Nat. Pk, 28.ii.-4.iii.1980, A. Newton and M. Thayer; Dorrigo Nat. Pk, 2.xii.1967, E. Matthews (paratypes of *O. tuckonie* Matthews); Gibraltar Range Nat. Pk, 5.xii.1967, E. Matthews (paratype of *O. tuckonie* Matthews); Wiangaree S.F., 29.ii.-3.iii.1980, A. Newton and M. Thayer; Wiangaree S.F., 10-12.ii.1983, T. Weir and A. Calder; Richmond Range S.F., 13-14.ii.1983, T. Weir and A. Calder; Beauray S.F., 15-17.ii.1983, T. Weir and A. Calder.

Storey (1977) gave the distribution as southeastern Queensland near Cunningham's Gap and Bald Mountain via Emu Vale. The records above have greatly extended this southwards to Barrington Tops. Williams and Williams (1983a, 1983b, 1983c) gave many other records from the intervening areas of coastal New South Wales. Specimens have been taken at human faeces, squid, malt and at flight intercept traps in rainforest.

O. asper Macleay

QUEENSLAND: 17km S of Mt Carbine, 28.v.1977, A. Macqueen; 40 Mile Scrub via Mount Garnet, 22.xi.-21.xii.1985, 10.i.-25.ii.1986, Storey and Heiner; Davies Ck via Mareeba, 4-8.ii.1976, R.I. Storey; Southedge Res. Station via Mareeba, 1.x.1976-10.ii.1977, R.I. Storey; Mt Mulligan Plateau, 15-19.iv.1985, K.H. Halfpapp.

Matthews (1972) gave the distribution as Queensland from Gayndah to Charters Towers, mostly in inland localities with an annual rainfall less than 750 mm. New records extend this distribution some 400 km northwards. At Southedge Research Station near Mareeba, where dung baited pitfalls were run fortnightly from Feb. 1976 to Feb. 1977, *O. asper* was only taken from November through to February, whereas the related *O. ocelliger* Harold occurred in all months except June, July and August.

O. clypealis Lea

QUEENSLAND: 97 km E of Hughenden, 9.xii.1978, R.I. Storey; 40km W of Georgetown, 9.i.1978, R.I. Storey and I.J. Titmarsh; Wrotham Park via Chillagoe, 27.x.-10.xii.1976, 28-29.i.1978, R.I. Storey.

Matthews (1972) examined only five specimens of this species, of which only one was from Queensland (Mutchilba). Numerous specimens have been taken since in inland areas with reddish sandy soil from the southern part of Cape York Peninsula as far south as east of Hughenden. The Wrotham Park and Hughenden localities were forest dominated by *Eucalyptus miniata* A. Cunn. (Myrtaceae) growing on red soil. Trapped with human faeces and taken at light.

O. planicollis Harold

QUEENSLAND: 40km W of Georgetown, 9.xi.1978, R.I. Storey and I.J. Titmarsh; Cooktown, 27-28.xi.1976, R.I. Storey; Janie Ck, 12km S of Old Mapoon Mission, 30.xi.1983, A. Walford-Huggins.

Matthews (1972) gave the distribution as the east coast of Cape York Peninsula, from Torres Strait south to Cape Bedford. New records are south and southwest of this. Taken at light and in traps baited with human faeces.

O. macleayi Blackburn

QUEENSLAND: Fraser I., 31.xii.1973, A. Macqueen.

Matthews (1972) gave the distribution from the north coast of New South Wales to Bundaberg in Queensland including Bribie I. and North Stradbroke I. This new record is from Fraser Island, the largest and northern most offshore sand island in southeastern Queensland.

O. pillara Matthews

QUEENSLAND: 26km up Tinaroo Creek Rd, 10.xi.-23.xii.1982, 23.xii.1982-12.i.1983, 12-28.i.1983, 28.i.-16.ii.1983, 16.iii.-12.iv.1983, Storey and Brown; 18km up Davies Ck Rd, 2-18.ii.1983, 12.iv.-14.v.1983, Storey and Titmarsh; Wongabel S.F., 6km S Atherton, 10.xi.-1.xii.1983, Storey and Brown.

Originally described from a short series taken at The Crater near Herberton. This unusual rainforest species has proved to be one of the most common *Onthophagus* species taken in flight intercept traps set near that locality, where it is active from September through to June. It has still not been taken in bait traps and its biology is unknown.

O. bornemisszai Matthews

QUEENSLAND: Cunningham's Gap, 18.i.1973, R.I. Storey.

NEW SOUTH WALES: Yabbra Forest Rest Area, 7km S of Urbenville, 2.xii.1982, B. Halliday; 28.22S, 153.05E, Wiangaree S.F., 1050m, 10-12.ii.1983, T. Weir and A. Calder; 28.48S, 152.59E, Richmond Range S.F., 600m, 13-14.ii.1983, T. Weir and A. Calder; 28.29S, 152.32E, Beaury S.F., 700m, 15-17.ii.1983, T. Weir and A. Calder; 32.08S, 151.27E, Allyn R., Chichester S.F., 10-11.xi.1981, T. Weir.

Matthews (1972) described this species from three localities in coastal New South Wales: near Eden, Batemans Bay and south of Kempsey. Williams and Williams (1983a, 1983b, 1983c) gave further records within this range and extended the distribution westwards to the Barrington Tops area. Allsopp (1975) recorded it from closed forest at Ravensbourne in south-eastern Queensland. Further records are given here, all some distance from the coast, and three are from closed forests at altitudes up to 1050 metres. Specimens were taken in wallaby, pig and human faeces, in closed and open forest.

O. bunamin Matthews

QUEENSLAND: 15.47S, 145.14E, Shiptons Flat, 16-18.v.1981, J. Feehan; Iron Range, 15-21.iv.1977, R.I. Storey; Lockerbie Scrub, 7-14.iv.1977, R.I. Storey; 12.43S, 143.18E, 11km ENE of Mt Tozer, 11-16.vii.1986, T. Weir; 12.43S, 143.16E, 7km ENE of Mt Tozer, 6.vii.1986, T. Weir.

Matthews (1972) gave the distribution of this species as lowland coastal areas of northern Queensland from Sarina to Daintree. Subsequent collecting has extended this range northwards to Lockerbie at the tip of Cape York Peninsula. All specimens, except one, were taken at human faeces in open forest.

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